

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Katsushi MIKI et al.

Title: Thermally expanded microsphere,
process for producing the same,
thermally expandable microsphere
and use thereof

Appl. No.: 10/595,910
Filing Date: 11/15/2004
Prior Appl. No.: PCT/JP04/16940

Examiner: Jeffrey Lenihan

Art Unit: 1796

Confirmation Number: 8921

DECLARATION UNDER 37 C.F.R. § 1.132 OF KATSUSHI MIKI

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, KATSUSHI MIKI, do hereby make the following Declaration:

1. I graduated from the Department of Biofunctional Applied Science, Faculty of Engineering, Okayama University, Okayama, Japan in March 1998. I also received a Master of Engineering degree from Graduate School of Engineering, Okayama University, Okayama, Japan in March 2000.

2. I have been employed by Matsumoto Yushi-Seiyaku Co., Ltd. of Yao city, Osaka Prefecture, Japan, as a Research Scientist since April 2000. During my employment at Matsumoto Yushi-Seiyaku Co., Ltd., I have been engaged in research and development of thermo-expansive microspheres at the Third Research Department of the company since 2000.

3. I have extensive experience in the field of thermo-expansive microspheres as evidenced by my education and my 9 years of professional experience at the Third Research Department, Matsumoto Yushi-Seiyaku Co., Ltd.

4. I am an inventor of the invention disclosed in US patent application no. 10/595,910. My employer, Matsumoto Yushi-Seiyaku Co., Ltd. owns the patent application no. 10/595,910. Other than my regular salary, I have not been provided additional compensation for preparing this declaration.

5. I am able to read and understand the English language when it is written.

6. I have read the Office Action dated June 23, 2009, in the US application no. 10/595,910.

7. Under my supervision and control, the following experiments were conducted:

EXPERIMENTS

(1) Object of Experiment

1) To prove that heat-expandable microspheres of Masuda (EP1508604) do not satisfy the ratio of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C as claimed in Claim 21.

2) To prove that heat-expanded microspheres as prepared by the teaching of both Masuda and Edgren (USP 4,397,799) do not satisfy the ratio of aggregated microspheres and the ratio of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C as claimed in Claim 11.

3) To prove that heat-expandable microspheres of Wu (USP 5,834,526) do not satisfy the ratio of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C as claimed in Claim 21.

4) To prove that heat-expandable microspheres prepared by the teaching both Masuda and Wu do not satisfy the ratio of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C as claimed in Claim 21.

(2) Experimental details

1) The trace experiment of Example 2 of Masuda was conducted. Then, the resultant heat-expandable microspheres (hereinafter referred to as "heat-expandable microspheres M") contained 99.1 weight percent of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C.

2) The heat expansion of the heat-expandable microspheres M was carried out in the same manner as of Example of Edgren. The resultant heat-expanded microspheres had an average particle size of 75 μm , and contained 9 weight percent of aggregated microspheres and 7 weight percent of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C.

3) The trace experiment of Example 1 of Wu was conducted. Then, the resultant heat-expandable microspheres contained 99.4 weight percent of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C.

4) Heat-expandable microspheres were prepared in the same manner as of Example 2 of Masuda except for replacing 20 g of 2-methyl pentane and 15 g of 2,2,4-trimethylpentane with 20 g of methyl perfluorobutyl ether (as disclosed in paragraph 0022 of Masuda and in line 39, column 3 of Wu) and 15 g of 1,1,1,2,3,4,4,5,5,5-decafluoro pentane (as disclosed in Example 1 of Wu). The heat-expandable microspheres contained 99.7 weight percent of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C.

(3) Conclusion

1) The heat-expandable microspheres of Masuda do not satisfy the ratio of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C as claimed in Claim 21.

2) The heat-expanded microspheres as prepared by the teaching of both Masuda and Edgren do not satisfy the limitation as claimed in Claim 11.

3) The heat-expandable microspheres of Wu do not satisfy the ratio of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C. as claimed in Claim 21.

4) The heat-expandable microspheres as prepared by the teaching of both Masuda and Wu do not satisfy the ratio of microspheres having a true specific gravity not lower than 0.79 g/cc at 25 °C as claimed in Claim 21.

8. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

August 25, 2009

Date

Katsushi Miki

KATSUSHI MIKI